Correcting Moisture Meter Readings with FramePro Treated Framing

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Summary

Framing that has been treated with Koppers FramePro boron will exhibit elevated moisture meter readings due to the presence of the treatment chemicals. For example a resistance-type meter reading of 24% will correspond to a true 20% moisture content.

Wood that is freshly treated may in addition exhibit high moisture gradients that will further exaggerate the apparent moisture content. Where any doubt exists, an oven-dry test should be employed.

Background

Koppers FramePro treated framing is a boron-based, H1.2 compliant framing treatment product. As with other boron-based products, it can be identified by use of a pink dye colouring. SureBor is applied to wood using a vacuum-pressure treatment process that will add an average of 5 % to the actual moisture content of the wood.

After treatment and on exposure to air, the moisture content will revert to the equilibrium moisture content for those conditions. Drying will not occur to any appreciable extent while the wood remains block-stacked.

Effect on Moisture Meters

Like all boron-based treatments, the preservative added to the wood changes its electrical properties, causing elevated moisture meter readings. For wood that has been allowed to equilibrate with its surroundings, the following corrections apply:

Meter Reading, %	True Moisture Content %	
	Conductivity Meter*	Capacitance Meter
15	13	15
16	14	16
17	14	16
18	15	17
19	16	18
20	17	19
21	18	20
22	18	21
23	19	22
24	20	23
25	21	24
26	22	25
27	23	26
28	23	27
29	24	28
30	25	29
31	26	30

*Calibrated for Douglas fir

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Immediately after treatment, the moisture content near the surface of the wood will be significantly higher than the overall level, and this will re-distribute and/or evaporate in the weeks following treatment. The presence of this surface moisture can have an effect on the accuracy of moisture meters. If a moisture meter is used on freshly-treated wood, it is expected that this may display an artificially high result. With time (normally 3 to 4 weeks after treatment), this effect will diminish as the moisture gradient evens out.

For **freshly treated** wood it is recommended that the oven dry method is used to determine an accurate moisture content. Where this method is not available, the following correction table can be used to provide an indicative moisture content value:

Meter reading % MC	True % MC
24	16
26	16
28	17
30	18
32	18
34	19
36	19
38	20
40	21

Where any doubt exists, the true moisture content should be established by use of the oven-dry method. Please refer to AS/NZS1080.1:1997[1] for further information on the correct use of moisture meters.

A further approximate check can be made based simply on the wood dimensions. Wood that has been machined to the required target dimension (e.g. 90mm) at a typical 10% MC will swell by 2% or more if the MC exceeds 20%.

Moisture Meter Tips

- Use insulated electrodes only
- Insert electrodes to a consistent depth of 16mm
- Where possible take readings on all faces of timber and take the average result

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[1] AS/NZS 1080.1:1997 Timber – Methods of Test, Method 1: Moisture Content